



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/660,884	09/12/2000	Takashi Akahori	08038.0038	7052

22852 7590 02/14/2003  
FINNEGAN, HENDERSON, FARABOW, GARRETT &  
DUNNER LLP  
1300 I STREET, NW  
WASHINGTON, DC 20006

EXAMINER

WILLIAMS, ALEXANDER O

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 02/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/660,884	AKAHORI ET AL.
	Examiner Alexander O Williams	Art Unit 2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 30 January 2003.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 3-10 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 3-10 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)  
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_. 6) Other: \_\_\_\_\_

Application/Control Number: 09/660,884  
Art Unit: 2826

Serial Number: 09/660884 Attorney's Docket #: 08038.0025  
Filing Date: 9/12/00; claimed foreign priority to 5/7/98

Applicant: Akahori et al.

Examiner: Alexander Williams

Applicant's Response in Paper # 15, filed 1/30/03 has been acknowledged.

Claims 1 and 2 have been canceled.

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3 to 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yan et al. (U.S. Patent # 6,296,780 B1).

Initially, and with respect to claims 1, note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that Applicant has burden of proof in such cases as the above case law makes clear.

For example, in claim 3, Yan et al. (figures 1 to 5) specifically figure 1 show a semiconductor device comprising: a substrate **100**; an insulating film **120** of a fluorine-containing carbon film (see column 5, lines 29-31 for the carbon and see column 7, line 50 – column 8, line 24 for the fluorine process) formed on said substrate, wherein the surface of said insulating film is irradiated with hydrogen plasma (see column 4, lines 5-35 for the plasma from the etchant gas containing hydrogen); a wiring layer **117** of copper formed on said insulating film; and an adhesion layer **118** formed between said insulating film and said wiring layer, for preventing said wiring layer from being peeled off from said insulating film, wherein said adhesion layer includes a metal layer of a metal, and a layer of a compound containing carbon and said metal (see column 5, lines 25-32 which states that a carbon containing material is spun on the top of 118. The metal in this layer is titanium of the TiN). Yan et al. does not show the insulating film irradiated with hydrogen plasma and having the fluorine-containing carbon film or the adhesion layer including a metal layer of metal and a layer of a compound containing carbon and a metal. However, Yan et al. processes does discusses show the insulating film having a hydrogen plasma from the carbon-fluoride-hydrogen gas into the process zone and the fluorine-containing carbon film from the carbon-fluoride-hydrogen gas or the adhesion layer including a metal layer of metal and a layer of a compound (TiN) containing carbon (from the carbon-fluoride-hydrogen gas) and a metal (titanium) for purpose of providing the needs of having an etch system for effectively etching the layers that has good CD control and limits etch rate non-uniformity.

Application/Control Number: 09/660,884  
Art Unit: 2826

Therefore, it would be obvious to one of ordinary skill in the art to use the teaching of Yan et al.'s insulating film and adhesion layer to form the layers claimed by Applicant for purpose of providing the needs of having an etch system for effectively etching the layers that has good CD control and limits etch rate non-uniformity.

As to the grounds of rejection under section 103, see MPEP § 2113.

In claim 4, Yan et al.'s metal layer is formed of an element from titanium.

As to claims 6 to 9, note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

## Response

Applicant's arguments filed 1/30/03 have been fully considered, but are moot in view of the new grounds of rejections detailed above.

The insertion of Applicant's additional claimed language in the Amendment filed 6/20/02, for example, "in claim 1" cause for further search and consideration to make this action final.

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION

FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Field of Search	Date
U.S. Class and subclass: 257/762,758,700,701,774,751,759,760,763,764,767,773	1/12/02 9/16/02 2/12/03
Other Documentation: foreign patents and literature in 257/762,758,700,701,774,751,759,760,763,764,767,773	1/12/02 9/16/02 2/12/03
Electronic data base(s): U.S. Patents EAST	1/12/02 9/16/02 2/12/03

*Papers related to this application may be submitted to Technology Center 2800 by facsimile transmission. Papers should be faxed to Technology Center 2800 via the Technology Center 2800 Fax center located in Crystal Plaza 4-5B15. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center 2800 Fax Center number is (703) 308-7722 or 24. Only Papers related to Technology Center 2800 APPLICATIONS SHOULD BE FAXED to the GROUP 2800 FAX CENTER.*

Any inquiry concerning this communication or any earlier communication from the examiner should be directed to **Examiner Alexander Williams** whose telephone number is (703) 308-4863.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center 2800 receptionist** whose telephone number is (703) 308-0956.

2/12/03



Primary Examiner  
Alexander O. Williams